

U.S. Patent Application Serial No. 10/647,230  
Amendment filed December 9, 2004  
Reply to OA dated October 8, 2004

**AMENDMENTS TO THE CLAIMS:**

Please amend claims 1 and 3, as follows. This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**Claim 1 (Currently Amended):** A metal-bonded grinding tool comprising:

a base; and

abrasive grains bonded to said base by means of a metal bond matrix, said metal bond matrix

consisting essentially of:

~~containing~~ a Cu alloy as a main component;

zirconium; and

titanium;

~~wherein said metal bond matrix contains at least one of~~ zirconium and said titanium being  
present as one of an alloy phase, a mixed phase, and an intermetallic compound ~~of Zr and Ti.~~

**Claim 2 (Original):** A metal-bonded grinding tool according to claim 1, wherein a content of said at least one of an alloy phase, a mixed phase, and an intermetallic compound of Zr and Ti in said metal bond matrix is in a range of 3.8 to 19.2 wt%.

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**Claim 3 (Currently amended):** A metal-bonded grinding tool ~~according to claim 2,~~  
comprising:

a base; and

abrasive grains bonded to said base by means of a metal bond matrix containing a Cu alloy  
as a main component;

wherein said metal bond matrix contains at least one of an alloy phase, a mixed phase, and  
an intermetallic compound of Zr and Ti,

wherein the content of said at least one of an alloy phase, a mixed phase, and an intermetallic  
compound of Zr and Ti in said metal bond matrix is in a range of 6.4 to 14.1 wt%.

**Claim 4 (Original):** A metal-bonded grinding tool according to claim 1, wherein a weight  
ratio of Ti to Zr is in a range of 0.5 to 2.0.

**Claim 5 (Original):** A metal-bonded grinding tool according to claim 1, wherein said Cu  
alloy is selected from a group consisting of a bronze containing 10 to 33 wt% of Sn, a brass  
containing 5 to 20 wt% of Zn, and an aluminum bronze containing 5 to 20 wt% of Al.

**Claim 6 (Original):** A metal-bonded grinding tool according to claim 1, wherein said  
abrasive grains are abrasive grains of a material selected from a group consisting of diamond, cubic  
boron nitride, silicon carbide, and cemented carbide.